

56162-BJ-MMO-010/11023 *NEXCOM*

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**TECHNICAL MANUAL
FOR
LAUNDRY PRESS
MODEL 53 VANE**

FORENTA, INC.

PO BOX 607

2300 W. ANDREW JOHNSON HWY.

MORRISTOWN, TENNESSEE 37814

CONTRACT # N00024-85-H-8197



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NOTE

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FOREWORD

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CHANGE RECORD

NAVJAG FORM 10-1 (Rev. 11-1970)

Change No.	Date	Title and/or Brief Description	Signature of Validating Officer

Change Record/(Change Record-blank)

APPROVAL AND PROCUREMENT RECORD

APPROVAL DATA FOR: NAVSEA S6162-BJ-MMO-010/11023
Technical Manual
Laundry Press, Electrically Heated
General Utility
Model 53 VANE

APPROVAL AUTHORITY: Supervisor of Shipbuilding,
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Seattle, WA 98815

Letter Serial 242.43-43 dated 3 APR 1989

CONTRACT NUMBER	SHIP APPLICABILITY	QUANTITY OF MANUALS	QUANTITY OF EQUIPMENT	REPAIR YARD
N00024-85-H-8197	DD-964	2	1	Northwest Marine Iron Works Portland, Oregon

REMARKS:

CERTIFICATION:

DATE: 11-May-1989

IT IS HEREBY CERTIFIED THAT NAVSEA S6162-BJ-MMO-010/11023
TO BE PROVIDED UNDER CONTRACT NUMBER
N00024-85-H-8197 HAS BEEN APPROVED BY THE APPROVAL
DATA SHOWN ABOVE.

Don Stevens
Northwest Marine Iron Works
5555 N. Channel
Portland, OR 97217

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SAFETY SUMMARY

GENERAL SAFETY NOTICES

The following general safety notices supplement the specific warnings and cautions appearing elsewhere in this manual. They are recommended precautions that must be understood and applied during operation and maintenance of the equipment covered herein. Should situations arise that are not covered in the general or specific safety precautions, the commanding officer or other authority will issue orders as deemed necessary to cover the situation.

DO NOT REPAIR OR ADJUST ALONE

Under no circumstances should repair or adjustment of energized equipment be attempted alone. The immediate presence of someone capable of rendering aid is required. Before making adjustments, be sure to protect against grounding. If possible, adjustments should be made with one hand, with the other hand free and clear of equipment. Even when power has been removed from equipment circuits, dangerous potentials may still exist due to retention of charges by capacitors. Circuits must be grounded and all capacitors discharged prior to attempting repairs.

TEST EQUIPMENT

Make certain test equipment is in good condition. If a test meter must be held, ground the case of the meter before starting measurement; do not touch live equipment or personnel working on live equipment while holding a test meter. Some types of measuring devices should not be grounded; these devices should not be held when taking measurements.

INTERLOCKS

Interlocks are provided for safety of personnel and equipment and should not be battle shorted or otherwise modified except by authorized maintenance personnel. Do not depend solely upon interlocks for protection. Whenever possible, disconnect power at power distribution source.

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2300 W. ANDREW JOHNSON HIGHWAY
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MORRISTOWN, TENNESSEE 37814 U.S.A.

MODEL 53 VANE
GENERAL UTILITY PRESS

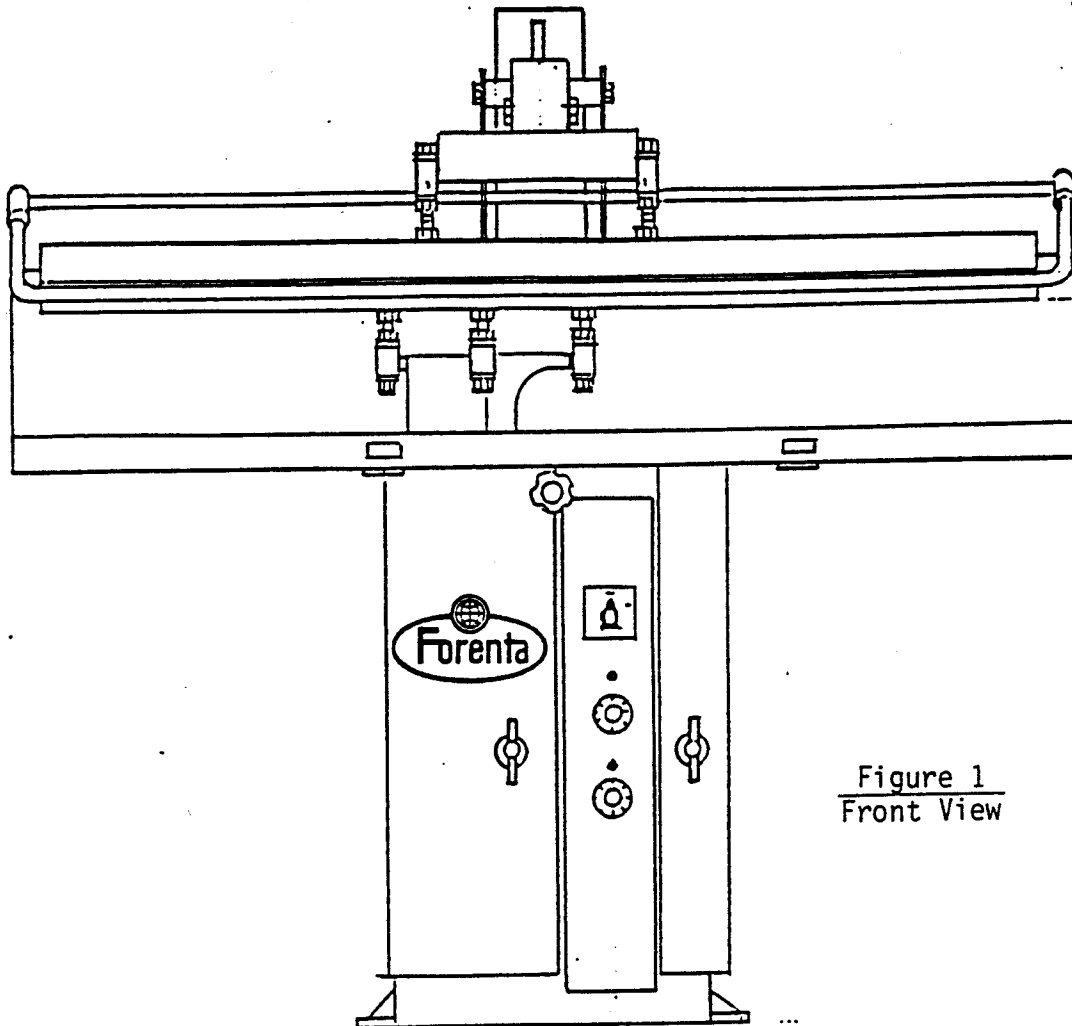


Figure 1
Front View

1.1 INTRODUCTION

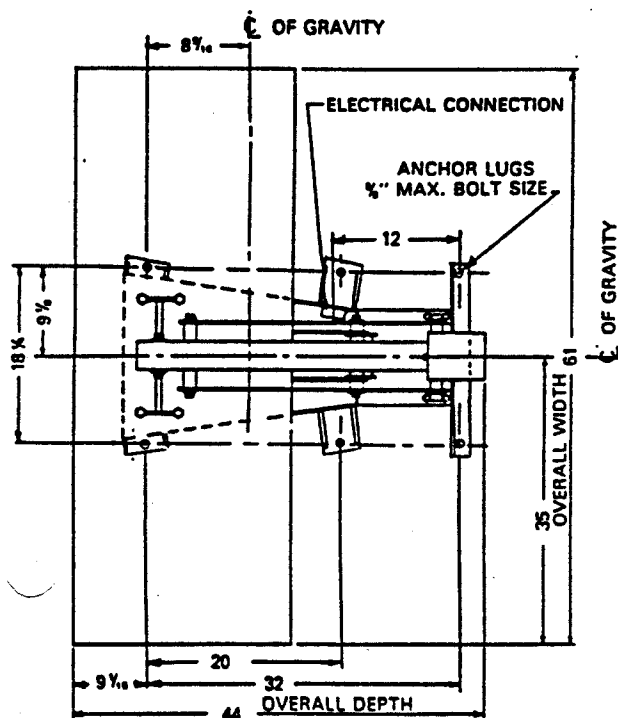
The Model 53 General Utility Press is a laundry press mounted on a Forenta Large V. Press Base. This press is used for small wearing apparel such as shirts, blouses, pullovers, pants, pant tops, jackets, etc.

The press is pneumatically operated with two hand control for closing the head and a Safety/Release Bar that surrounds the head for opening the head by lifting the bar.

For the best results in press usage, keep padding and cover in good condition, replacing as needed. In turn follow maintenance instructions carefully and make any necessary adjustments as called for. The Model 53 is one of the fastest operating laundry presses in the world.

1.2 SPECIFICATIONS

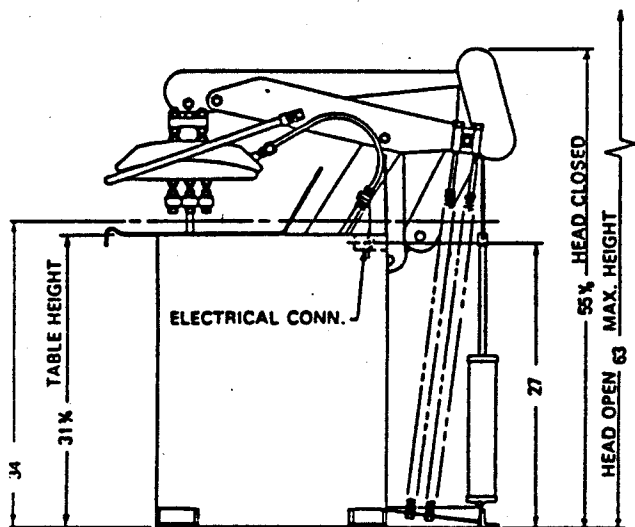
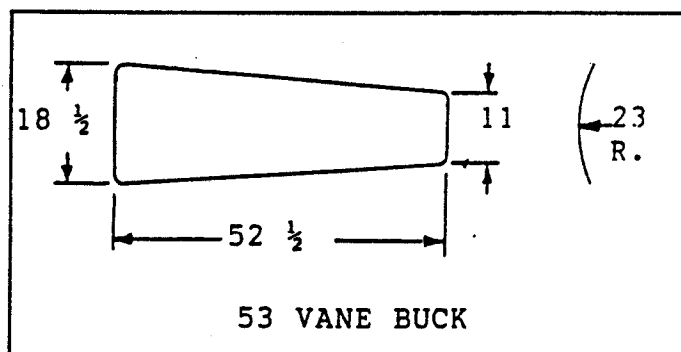
DETAIL LINE DRAWING



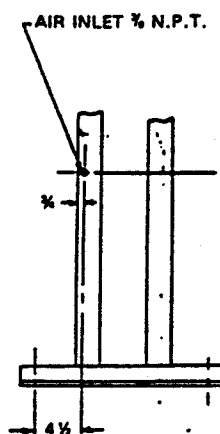
Width, Overall. 61
 Depth, Overall. 44
 Height, Overall 63
 Air Pressure. 68 lbs.
 Air Consumption . . . 1/8 CFM
 Air Inlet 3/8 NPT

Electrical Requirements:
 440 volts, 6300 watts,
 8.3 amps, 3 ph, 60 HZ

Domestic Shipping
 Weight (approx.). .940 lbs.



RIGHT SIDE VIEW



REAR VIEW

FIGURE 2. Specification Detail Drawing

INSTALLATION INSTRUCTIONS

2.1 UNCRATING

Uncrate machines carefully and check for concealed damage. Remove from base and move to approximate location before removing any of the holding blocks that are used for shipment. It is best to leave these in position until machine has been connected and the air turned on.

- If any damage caused by shipping is found, it should be reported to the transportation company and a claim filed by you.

CAUTION: DO NOT PUSH, PULL OR ATTACH RIGGING TO THE HEAD, BUCK OR LEVERAGES.

2.2 COMPRESSED AIR CONNECTIONS

NOTE: Air lines should be blown out thoroughly before connecting to the machine. This will help prevent debris from damaging valves and stopping up lines.

All air-operated machines have 3/8" connection at rear (see specifications). We recommend air filters on each machine to prevent dirt and scale from getting into the valves and air cylinders. If start and stop type of compressor is used, valve should be set so air does not go below 75 pounds. If constant running compressor is used with unloading valve, set between 70 and 80 pounds.

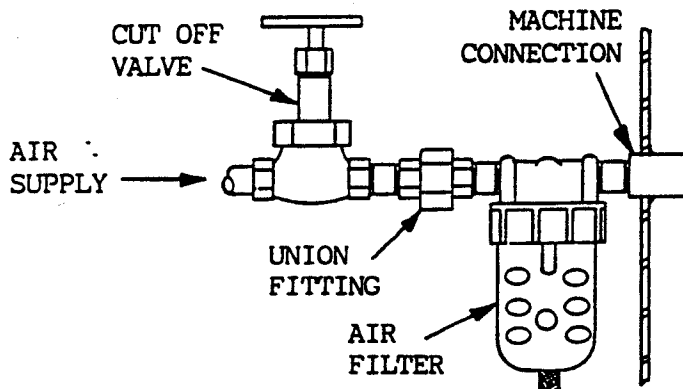


Figure 3
RECOMMENDED AIR SUPPLY PIPING ILLUSTRATION

NOTE: If other equipment require higher pressures, it is alright to set the compressor higher since all Forenta equipment has its own pre-set internal regulator.

A shut-off valve should be installed at each machine so that it can be serviced, if necessary, without shutting down the rest of the unit.

2. INSTALLATION INSTRUCTIONS (Cont.)

2.3 ELECTRICAL CONNECTIONS

Always use a qualified electrician in wiring any Forenta press to insure compliance with all local and national codes.

On electrically-heated models, the thermostats are rated to carry a heavier load than shown on the nameplate mounted on the frame of the machine. Do not allow your electrician to become confused and insist on heavier wiring because of the higher readings on the thermostat nameplate.

A main cut-out switch is recommended to control the electricity to the unit. Do not use the thermostat to shut off the machine. The thermostat should be carefully set at the proper temperature for the best operation and left at that setting.

3.1 TEMPERATURE

The on-off switch is located in the center front of the press. It should be switched to the on position to start the heat up of the press. The thermostat for the top pressing head should be set between 300° F and 320° F. This should be sufficient temperature to allow for proper drying without scorching the garments. The bottom buck thermostat should be set between 260° F and 275° F for the proper temperature to keep the padding dry. Allow the press 15 to 20 minutes to heat up to the proper pressing temperature.

SCORCHING

Temperature only is not necessarily the cause. Be sure your clothes are properly rinsed -- because soap will cause discolorations under heat.

3.2 TWO HAND CONTROL/SAFETY CONTROL BAR OPERATION

Operation of the two-hand control system is accomplished by depressing and holding the two buttons on the front of the table. This will bring the head down into pressing position. The machine still retains the safety feature of the control bar. If the bar hits some obstruction on the down stroke, the head will release. To raise the head at the end of the cycle, lift slightly on the control bar.

3.3 PRESSING INSTRUCTION

The use of the utility or apparel pressing surface frequently depends on the operator. The buck and head are tapered to allow small garments to be dressed. The broader base of the buck, as well as the length of the pressing surface can be used for creasing and pressing pant tops. The operator must determine the best position for the garment to get the best results.

3.4 PRESSURE ADJUSTMENTS

Adjust the press to meet your needs. Thicker garments, different kinds of materials, number of layers, etc., all have a bearing on the amount of pressure and length of time needed by the press. The Pressure Control knob is located under the front table in the center of the machine.

5 PRESSURE ADJUSTMENTS CONTINUED

N: This knob adjusts the position of the pressure arm roller in the cam at the rear top portion of the press. When the machine is in the pressing position, this roller should be 3/4" to 1" from the top of the cam. Turn clockwise to bring the roller higher in the cam slot. Turn counterclockwise to stop the roller at a lower point in the cam slot. The padding may need to be replaced if there is a lack of pressure at this point. Good pressing results are only possible with proper padding and pressure. (Refer to the "Maintenance" section in this manual for padding instruction.) Caution: Do not adjust so that roller hits the top of the cam slot.

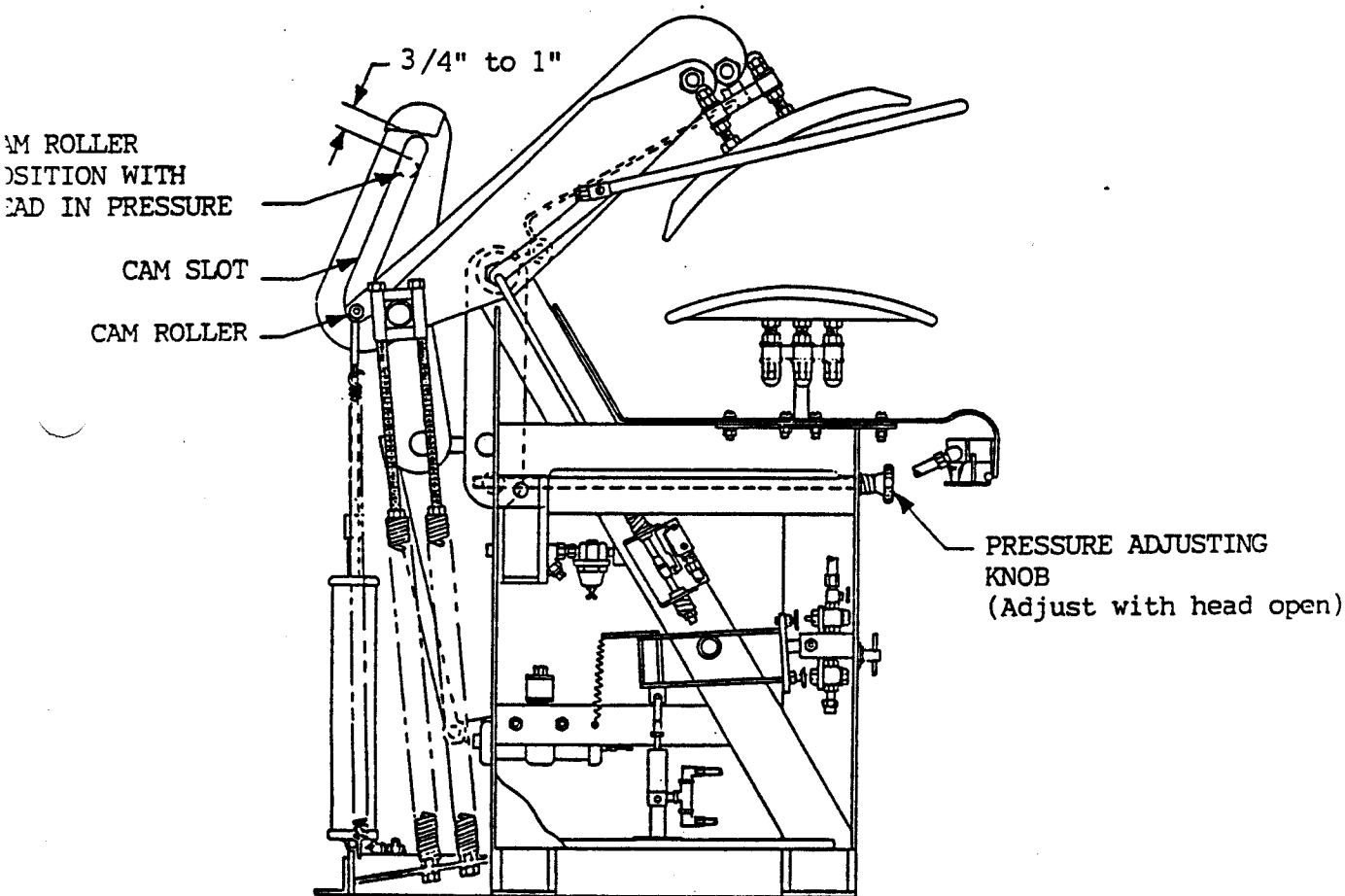


FIGURE 4
PRESSURE ADJUSTMENT ILLUSTRATION

NOTE: It is recommended that no adjustments be made on this press without first carefully reading the following instructions and without eliminating any outside causes for trouble, such as a low air pressure.

4.1 TWO-HAND SAFETY CONTROL OPERATION

The two hand control on the front of the table closes the head. The Safety Control Bar has no affect on the closing of the head. However, the Control Bar does release the head with a gentle lift on the Control Bar. This bar should always be positioned about 2" below the top of the buck when the head is down. If adjustments are necessary (refer to illustration below), they can be made easily by loosening the Collars "A" on Shaft "B" and moving the Safety Control Bar to the proper position. When this position is attained, the Collars must then be adjusted against the Springs "C" to hold the Safety Control Bar in position and return to position after it has been actuated. Cam "D" must be adjusted so that it opens Valve "E" with the slightest lift on the Safety Control Bar. When Valve "E" is opened, it will exhaust all air from the press.

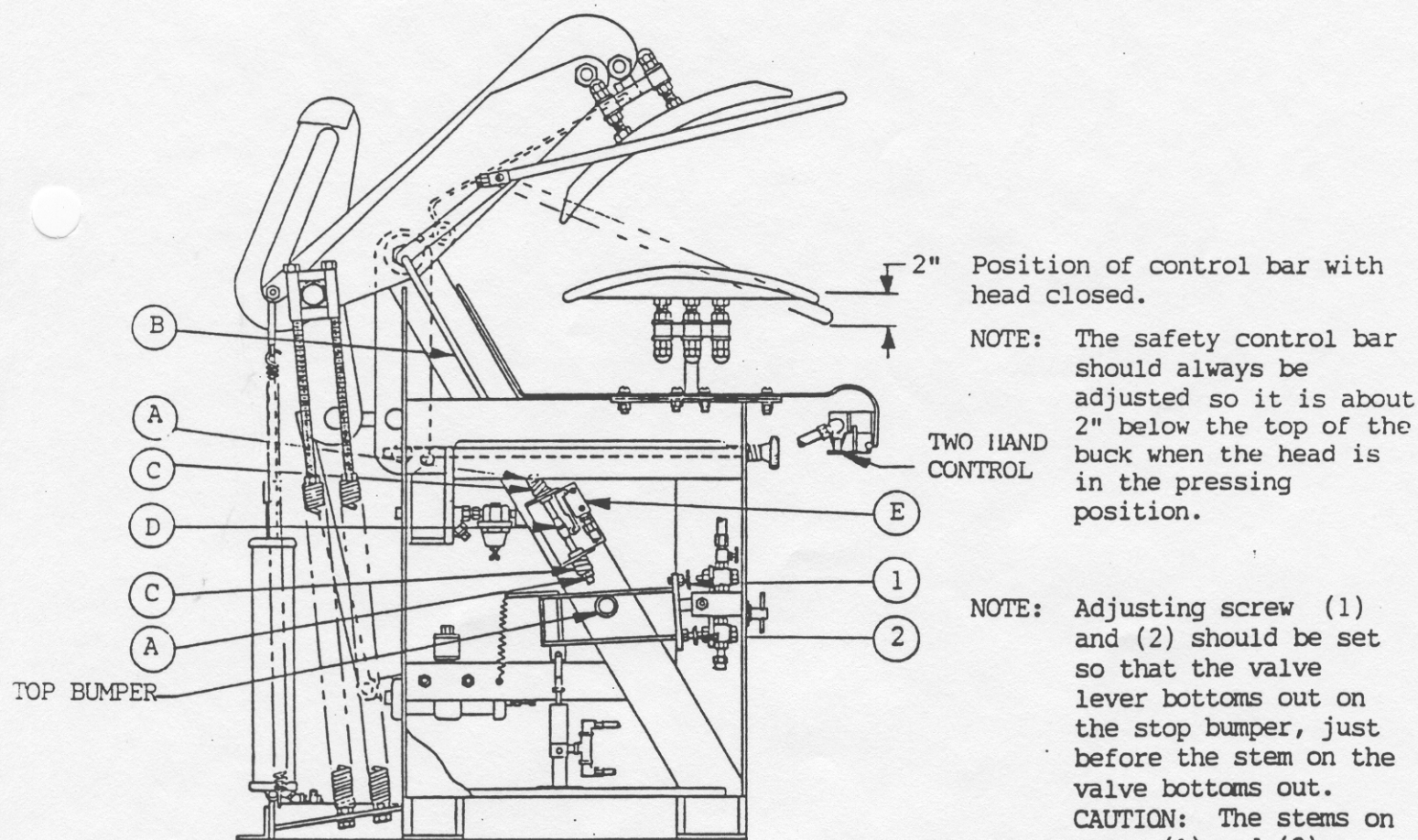


Figure 5

TWO-HAND SAFETY CONTROL ILLUSTRATION

4.2 AIR STRAINER

Remove screen from air strainer #7 (see Air Flow Diagram) and clean as required.

4.3 IF THE HEAD DOES NOT OPEN WIDE

This usually indicates weak springs. Tighten each of the large vertical springs on the rear of the press uniformly.

4.4 DOUBLE-ACTING SHOCK ABSORBER (snubber)

If the head goes up so hard at the top that it bounces back down, this usually indicates the Shock Absorber needs adjustment. If the head slams against the buck on the closing and proper operation cannot be secured by adjusting the Air Control Valve (see "Head Closing Speed Adjustment"), the Shock Absorber may need setting. This is accomplished by adjusting screws at each end of the shock cylinder. Loosen lock nut slightly before adjusting, and then tighten securely to prevent oil leakage. Adjust front screw to control open snubbing action. Turning screw clockwise increases snubbing action and counterclockwise decreases snubbing action.

Adjust screws only about one turn at a time. A supply of oil should stay in the shock reservoir at all times. If oil has to be added, use SAE #10 non-detergent oil.

NOTE: If shock is very old and adjusting does not seem to make it work properly, drain the oil out through the adjusting screws and replace with SAE #20 non-detergent oil. If this does not help, then replace the shock absorber.

4.5 AIR CYLINDERS

If the main pressure cylinder or any air cylinder develops air leaks, the O-ring must be replaced. When removing O-ring from the piston, be careful not to nick on edge of the groove. The O-ring can usually be slipped off by pressing the ring between thumb and forefinger and sliding toward one side to create looseness so that it can be pulled off with the other hand. Clean the piston and cylinder wall. Replace the O-ring using a liberal amount of plastilube grease. It is also advisable to use a new base gasket when re-assembling the cylinder. A light film of grease can be applied to the piston rod to prevent rust and reduce friction.

NOTE: Plastilube grease may be obtained from Forenta.

CAUTION: DO NOT PUT OIL IN CYLINDERS.

IF PRESSURE ARM JUMPS AFTER HEAD CLOSES

First, be sure cylinder is properly lubricated and not binding. Next, set pressure adjustment by turning knob as instructed in the Operating Instruction section. If the trouble still persists, this usually indicates too much down-snubbing action. If the snubber takes hold too soon and before the head reaches the buck, it may cause excessive air pressure to build up in the cylinder and as soon as the pressure lever goes from low pressure to high

If Pressure Arm Jumps Just After Head Closes (Cont)

pressure position, it will move very rapidly three or four inches, rather than moving slowly into high pressure position. Adjust as instructed under "Double-Acting Shock Absorbers" in Maintenance section. Head springs that are set too tight will also cause this.

4.6 LUBRICATION

All bearings are packed with grease and should last for years. However, grease fittings have been provided at all bearing points and should be greased at least every six months.

NOTE: Refer to "Preventative Maintenance Servicing Schedule" section.

4.7 HEATING ELEMENT REPLACEMENT

Disconnect power to the machine. Disconnect wires from the heating element. Loosen the hold downs. Slide the element and hold down strip out from between the plates. Reverse this procedure to replace the element making sure the hold down strip is in place as shown in the illustration. Make sure The wire terminals have adequate clearance from any metal parts.

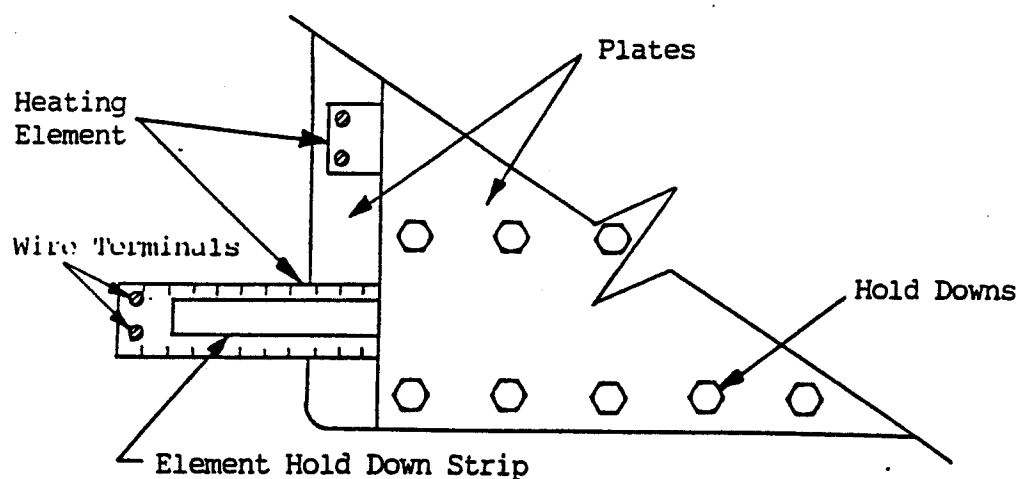


Figure 6

HEATING ELEMENT REPLACEMENT ILLUSTRATION

4.8 HEAD CLOSING SPEED ADJUSTMENT

Adjusting Valve #9 (see "Air Flow Diagram") can be turned clockwise to slow head movement down and turned counter-clockwise to make the head close faster. The Valve should be adjusted so the head comes down rapidly and smoothly without slamming on the buck.

4.9 AIR PRESSURE

Regulator #8 should be set at 68 PSI.

4.10 PADDING

The padding must be maintained properly to assure a quality finish. The buck liner goes against the bare buck. The mesh pad is placed on the liner. A piece of 20 oz. nylon flannel goes on top of the mesh. A larger piece of 20 oz. punched nylon flannel is placed on top of this flannel. This flannel should be large enough to tuck under the buck so as to keep the outer cover from coming into contact with the bare buck. The outer cover goes on last and is tied on with a draw string. Springs also are used underneath the buck to help secure the cover and keep it tight.

The flannel should be checked about every 4 weeks. If it has become hard and brittle, it should be replaced. This flannel must stay soft and have some bounce-back to it in order to get a good press. If it is not replaced when necessary, continuous pressing will cause it to deteriorate as it is compressed against the mesh pad.

The mesh pad may last for one, two, or three years, more or less, depending on how much the press is used and depending on how well the flannel described above is maintained.

The outer cover need be replaced only when it shows signs of wear or deterioration. The outer cover should be washed when it becomes soiled.

NOTE: The padding, as a whole, must have some downward compression when the head comes into pressure, and upward expansion when the head is raised.

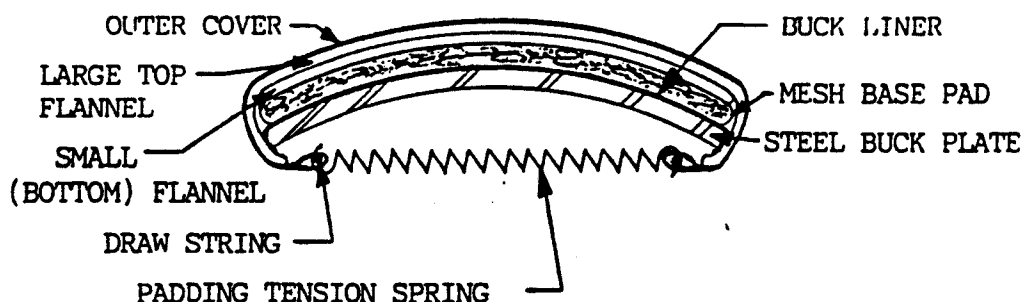


Fig. 7 PADDING ILLUSTRATION

4.11 CARE OF PRESS HEAD

Clean all pressing surfaces with EZ-OFF while heads are hot. If scouring is needed, use a copper mesh scouring pad. This should be done daily or as often as needed. Apply Paraffin wax, or Hot Head Press Lube twice daily. This will help prevent starch build up.

4.12 PREVENTATIVE MAINTENANCE SCHEDULE

CAUTION: Do not add oil to the air system or air cylinders.

DAILY:

1. Apply paraffin wax or HOT-HEAD PRESS LUBE to all polished pressing surfaces.
2. As needed clean all polished pressing surfaces with EZ-OFF while heads are hot. Do not use any abrasive that will damage the polished surfaces.
3. Drain air filters in the supply line to the machine.

Every three(3) months:

(Numbers in parenthesis refer to Figure 8, sheet 4-7)

1. Check for steam and air leaks (any leaks should be repaired).
2. Insure the sight glass (1) on the snubber is filled with SAE-10 non-detergent oil.
3. Apply a light coat of grease or oil to the piston rod (2) to prevent rust build-up.
4. Apply a light coat of grease or oil to the stem valves (3) and (4).
5. Remove strainer on air separator (7), clean and reinstall.
6. Check the air gauge connected to the pressure regulator (8) to insure it is set to the recommended pressure as specified in the instruction manual.
7. Apply a light film of grease to the cam roller guide slot (5).
8. Inspect the buck cover and flannels (6). Replace if worn or frayed.
9. Check the control system to insure the machine is functioning properly.

PREVENTATIVE MAINTENANCE SERVICING SCHEDULE (CONT)

10. Check the electrical controls to insure the on/off switch is functional, the thermostats are functional, and the "HEAT ON" pilot lights are functional.
11. Check the mechanical action of the machine to insure that it is working smoothly with no erratic action. Make adjustments or repairs as necessary.

Every six (6) months:

(see attached drawing)

1. Grease all grease fittings. (There are 13 fittings, see Fig.8)
2. Inspect buck padding (6). Replace if worn or frayed.
3. Remove cam roller bearings and repack with grease. (Requires approximately 1 hour.)

Every twelve (12) months:

(see attached drawings)

1. Inspect buck padding (6) and replace as needed.

Pre-Installation/Storage Maintenance:

No servicing of this type of laundry press is required during pre-installation storage or in service storage as long as the press is kept in dry storage.

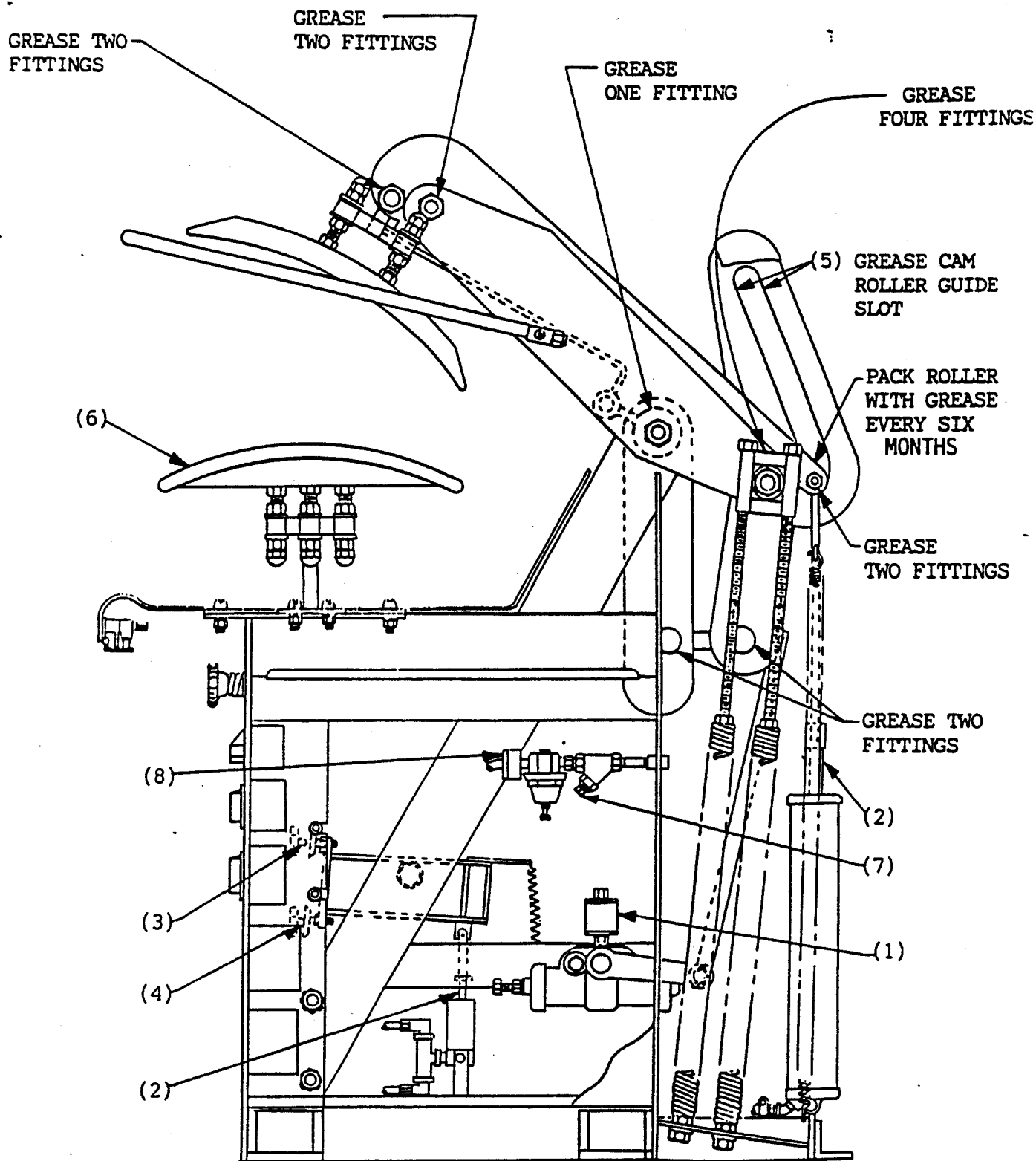


Figure 8

PREVENTATIVE MAINTENANCE SERVICING ILLUSTRATION

5.1 TROUBLE SHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
Press Closes Slowly	Air pressure low	Set air reg. #8 to 68lbs.
	Piston ass'y in reg. #8 defective	Replace piston ass'y.
	Air metering valve #9 closed.	Open until head closes at correct speed.
	Air valve #3 not opening	Adjust per instruction under maintenance.
	O-Ring leaking in main cylinder.	Replace O-Ring.
Press closes too fast	Air pressure above 68 lbs.	Turn air regulator to 68 lbs.
	Air metering valve open too much.	Adjust metering valve.
	Snubber out of oil	Fill with #10 non-detergent oil.
	Air regulator piston ass'y leaking.	Replace piston ass'y.
Press closes with a thump	Snubber out of adjustment. (NOTE) To lessen snubbing action, turn rear bolt one turn at a time counter-clockwise until the desired results are obtained.	Adjust snubber.
	Air metering valve #9 closed too tight.	Open valve #9.
Head slams up when press released.	Snubber out of oil.	Fill with #10 wt. non-detergent oil.
	Snubber out of adjustment.	Adjust snubber.
Air leaks through small hole in top of regulator	Diaphragm leaking.	Replace diaphragm.
Continuous air leak through bleed hole in cylinder wall or top when cylinder is under pressure.	Cut or worn o-ring.	Replace O-Ring. See instructions in Maintenance Section.

5.1 TROUBLE SHOOTING (Cont)

PROBLEM	POSSIBLE CAUSE	REMEDY
Air pressure on press builds up to main line pressure	Piston assembly in air regulator not seating.	Replace piston ass'y.
Drop in pressure more than 4 to 5 lbs. when press is operated.	Partial stoppage in air supply line to press.	Blow lines and regulator out.
	Dirty regulator and carbon build-up in regulator air passages.	Clean regulator.
	Piston assembly in bottom of air regulator leaking.	Replace piston assembly.
	Screen in Air Strainer #7 stopping up.	Clean screen.
Air pressure cannot be regulated by adjusting screw in top of air regulator	The spring in top of regulator is broken or rusted, causing loss of tension.	Replace spring.
	Diaphragm leaking.	Replace diaphragm.
Heads do not completely open or drop somewhat after opening	Not enough head spring tension to hold the head at a full open position.	Add enough spring tension to hold the head at a full open position.
Air leaking around stem of valve.	Small o-ring on stem leaking.	Replace "O" Ring.
No heat on head.	Hd. thermostat defective.	Replace thermostat.
	Hd. element burned out.	Replace element.
	Circuit breaker kicked out or fuse blown.	Reset breaker or fuse.
Buck not heating.	Buck thermostat defective	Replace thermostat.
	Buck element burned out.	Replace element.
	Circuit breaker kicked out or fuse blown	Reset circuit breaker or fuse.

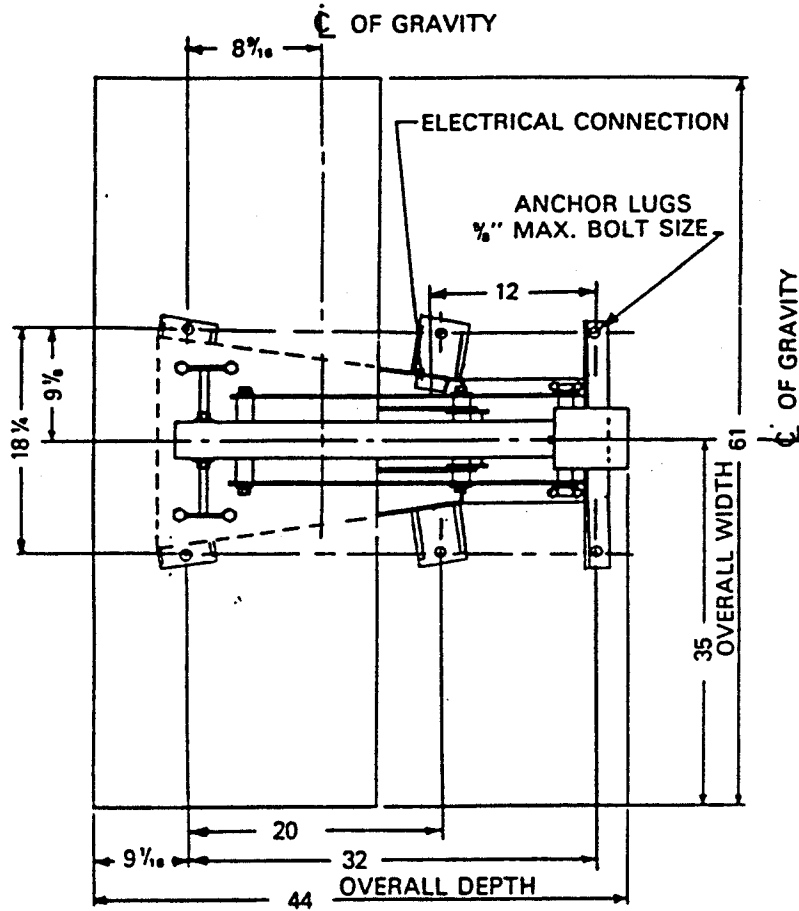
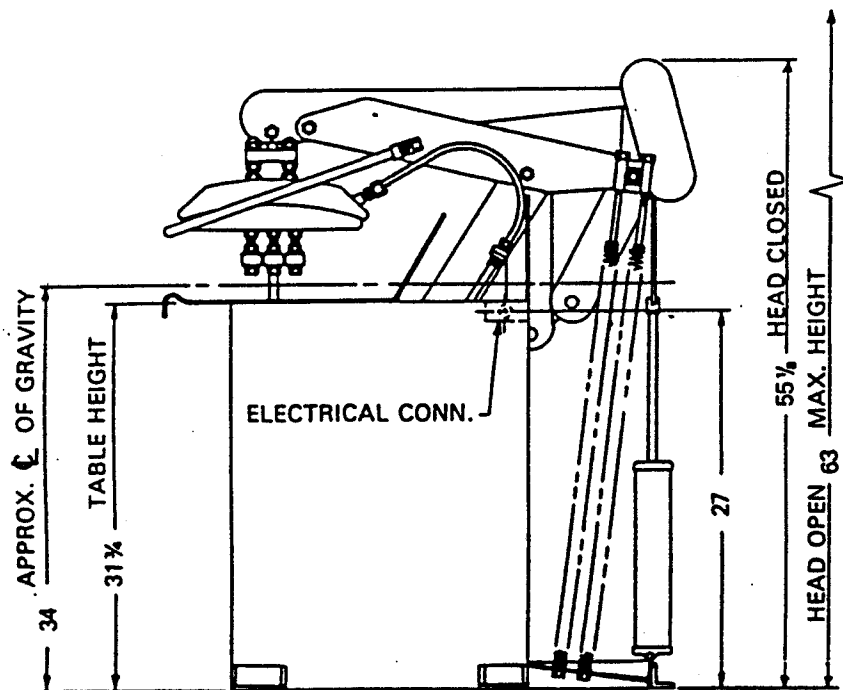
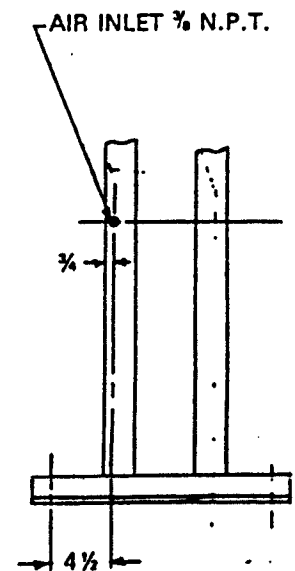


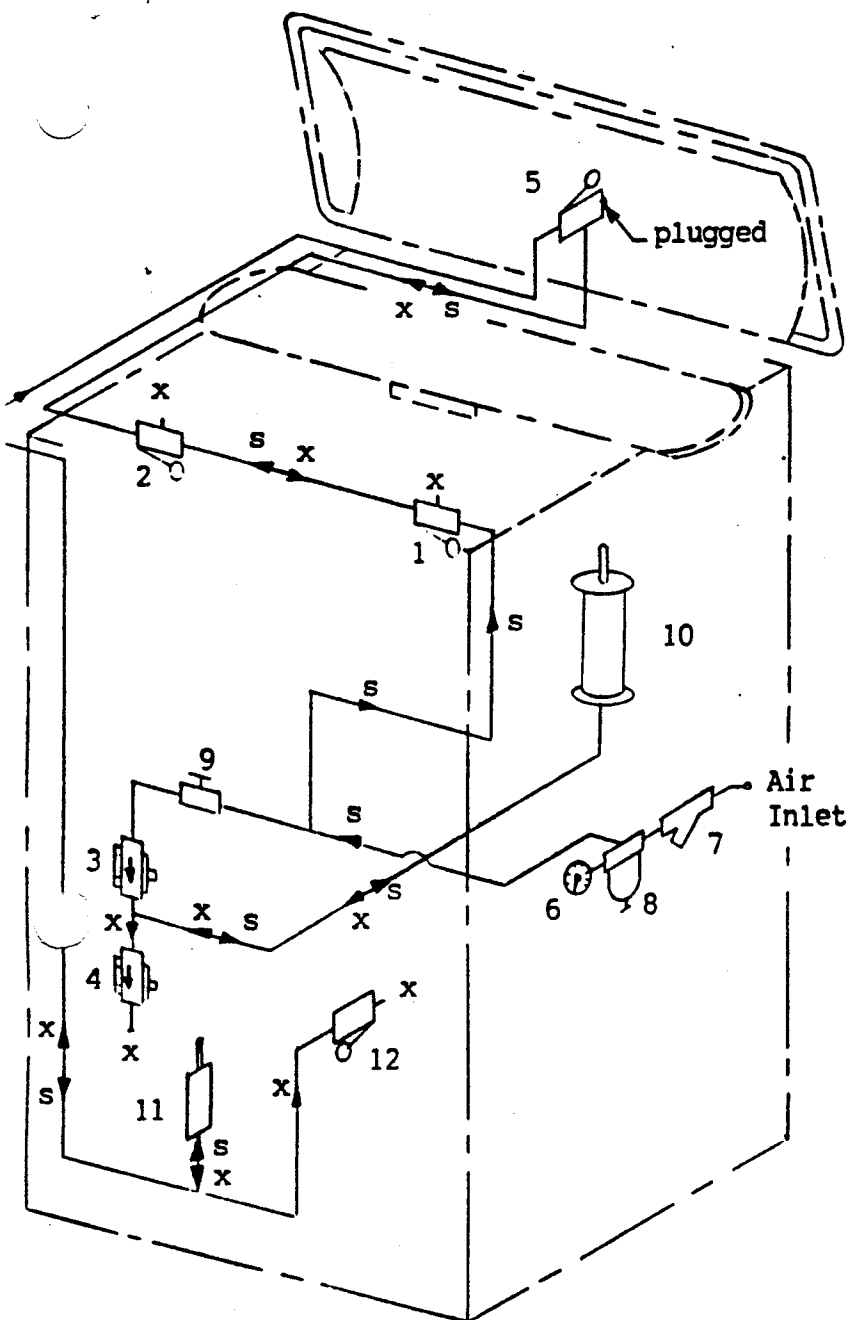
Figure 9
Detail Line Drawing



RIGHT SIDE VIEW



REAR VIEW



LEGEND

- s - Supply air direction
- x - Exhaust air direction
- 1 - Right operating valve
- 2 - Left operating valve
- 3 - Cylinder supply valve
- 4 - Cylinder exhaust valve
- 5 - Head locking valve
- 6 - Air pressure gauge
- 7 - Air strainer
- 8 - Air pressure regulator
- 9 - Head closing speed valve
- 10 - Head closing cylinder
- 11 - Head closing actuating cylinder
- 12 - Head release valve

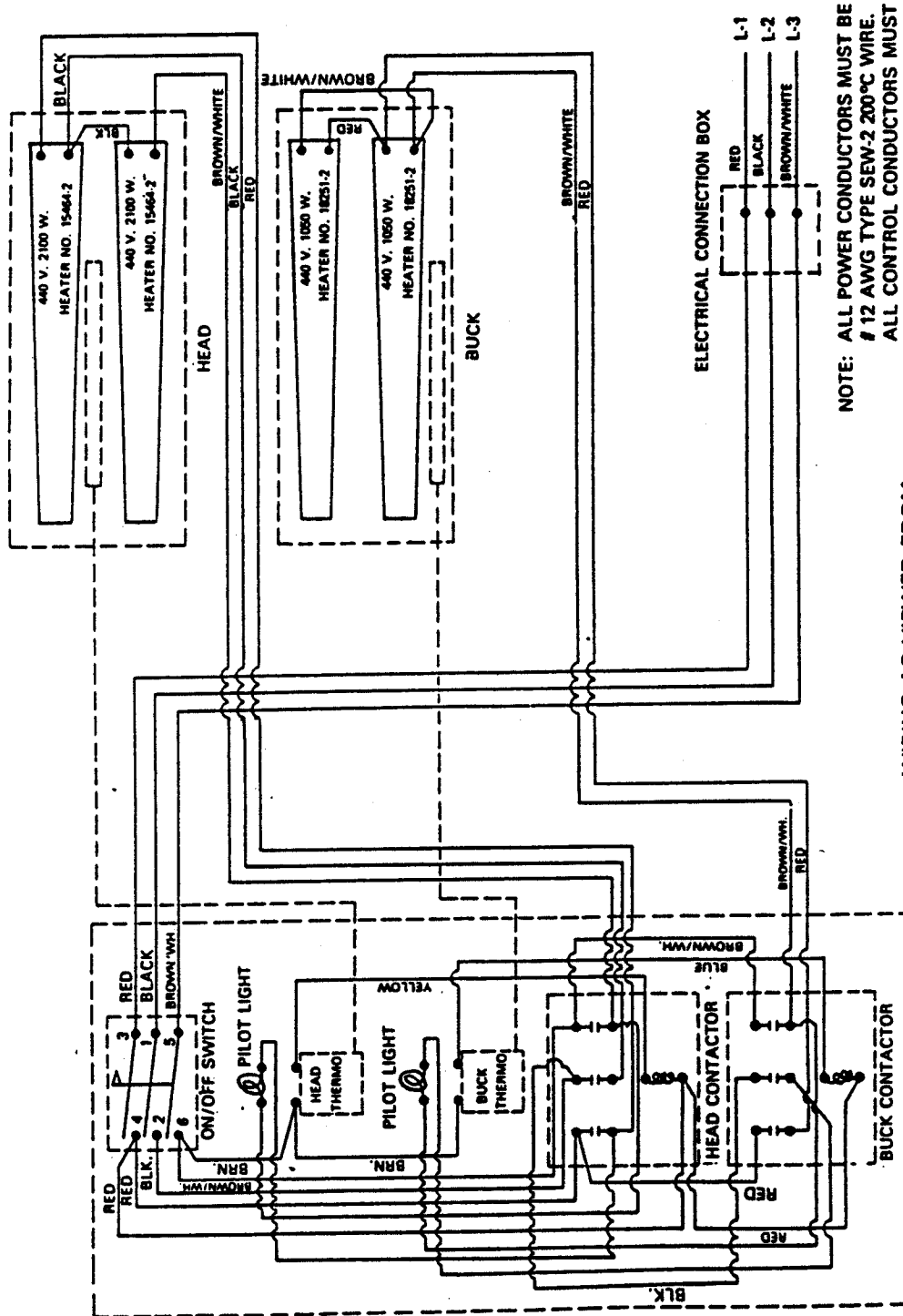
Figure 10
AIR FLOW DIAGRAM

The air-pressure regulator 8, should be set at 68 lbs. on guage. Adjust this with the head down in pressing position.

Hand-adjusted needle valve 9 controls the closing speed of the head. Adjust it to give the best speed without causing the head to slam the buck.

Supply valve 3 is actuated when the two-hand buttons pressed. It supplies air to the head closing cylinder. Valve 4 is the exhaust valve. It exhausts all air from the machine when the head is opened.

ELECTRICAL DIAGRAM



NOTE: ALL POWER CONDUCTORS MUST BE
12 AWG TYPE SEW-2 200°C WIRE.
ALL CONTROL CONDUCTORS MUST
BE # 14 AWG TYPE TEW 105°C WIRE.

WIRING AS VIEWED FROM
REAR OF MACHINE.

Figure 11
Electrical Diagram

7.1 PARTS LIST

Fig-Item	Part #	Description	Qty
12- 1	A-582	Cam for head pressure	1
12- 2	29441	Safety kick-off Rod	1
12- 3	16511	Kick-off rod spring	2
12- 4	15767-79	Bushing 3/8 x 1/2 x 1/2	2
12- 5	29415	Safety kick off cam	1
12- 6	15941	Kick-off spring	1
12- 7	A-5822	Valve lever	1
12- 8	A-786	Snubber, right hand	1
12- 9	A-5821	Activating cylinder assembly (consists of parts in Figure 15)	1
12-10	15100	Valve, .25" (consists of parts in Fig. 17)	2
12-11	16371	Metering valve	1
12-12	15129	Spring for pressure adjusting rod	1
12-13	16386	Knob	1
12-14	15115-4	Guard rail	1
12-24	A-5062	Head lift spring (front)	2
	16562	#6 Head lift spring	1
	16041	spring insert	2
12-30	16610	Air Strainer (consists of parts in Fig.14)	1
12-44	28034-3	Air valve	4
13-15	15464-2	440V/2100W Head element 5, 173.18	2
13-16	18251-2	440V/1050W Buck element	2
13-17	30934	Off/On switch	1
13-18	16079-1	Gauge, air pressure	1
13-19	A-6445	320 degree F head thermostat	1
13-20	30933	Pilot light	2
13-21	16048	Regulator, 1/4" (consists of parts, Fig.16)	1
13-22	A-6446	275 degree F buck thermostat	1
13-23	30932	Contactator	2
13-25	A-1648	Head lift spring (rear), consists of:	2
	15786	#3 Head lift spring	1
	16041	Spring insert	2
13-26	15810	Shaft, cylinder pivot	2
13-27	15803	Spring, piston return	2
13-28	26125	Oiler	1
13-29	A-673	Bar connecting snubber to cam	1
13-31	A-892	Cylinder Assembly, 2.75 (see Fig. 18)	1
13-32	15825	Shaft, pressure adjusting, 1.5" x 4.5"	1
13-33	16466-2	Shaft, frame to link	1
13-34	A-793	Rod, pressure adjusting	1
13-35	A-1866	Pressure link service assembly with bearings & grease fittings, consists of:	1
	A-674	Pressure link weldment	1
	16394	Bearing, race	2
	16395	Bearing, needle	2
13-36	15824	Shaft, cam to pressure link	1
13-37	A-1070	Rear spring bolt	4
13-38	A-1818	Bearing assy for rod fork, consists of:	2
	16391	Bearing, needle	1
	16397	Bearing, race	1
13-39	A-599	Fork casing for end of piston rod	1

7.1 PARTS LIST (cont)

Fig-Item	Part #	Description	Qty
-40	A-1816	Roller pressure assembly for large head pressure cam, consists of:	1
	15733	Washer, special	2
	16392	Bearing, needle	1
	16393	Bearing	1
	16397	Bearing, race	1
13-41	15315	Shaft, cam roller	1
13-42	A-648	Spring hanger	2
13-43	15732	Shaft, spring hanger	1
13-45	15731	Shaft, rocker arm	2
13-46	A-1887	Pressure lever	1
13-47	15730	Shaft for head mount	1
13-48	A-1863	Head mount assembly with bearing & grease fittings, consists of:	1
	A-672	Bracket Weldment	1
	15047	Spacer, 1	1
	15270	Bearing, race	2
	15271	Bearing, needle	2
	16366	Grease fitting	2
14-30A	none	Body	1
14-30B	none	Screen	1
14-30C	none	Gasket	1
14-30D	none	Plug	1
15- 9A	15097-6	O-ring	1
15- 9B	A-2569	Cylinder tube	1
15- 9C	15381	Cylinder top	1
15- 9D	A-5861	Piston rod weldment	1
16-21A	21660	Spring	1
16-21B	21661	Gasket for diaphragm	1
16-21C	21662	Diaphragm	1
16-21D	21665	Piston	1
16-21E	21666	Spring for piston	1
16-21F	27559-6	Gasket	1
17-10A	16707	Lock nut	1
17-10B	16511	Spring	1
17-10C	16606	Seat Holder	1
17-10D	15923	Disc	1
17-10E	27121-6	Screw	1
17-10F	27121-2	Stem	1
17-10G	15097-5	O-ring, 5/16	1
18-31A	15117	Base casting	1
18-31B	A-1600	Piston and Rod	1
18-31C	15097-4	O-ring, 2.75	1
18-31D	18262-8	Tube	1
18-31E	15403	Gasket	1
18-31F	15116	Top casting	1
19-1	18138	Buck liner	1
19-2	17386	Monel buck pad	1
19-3	18136	Small (bottom) flannel	1
19-4	18137	Large (top) flannel	1
19-5	16282	Buck cover w/spring	1
none	16359-1	Plastilube grease (cartridge)	
none	K-152	Shock absorber oil (quart)	

PARTS ILLUSTRATION
LEFT SIDE VIEW

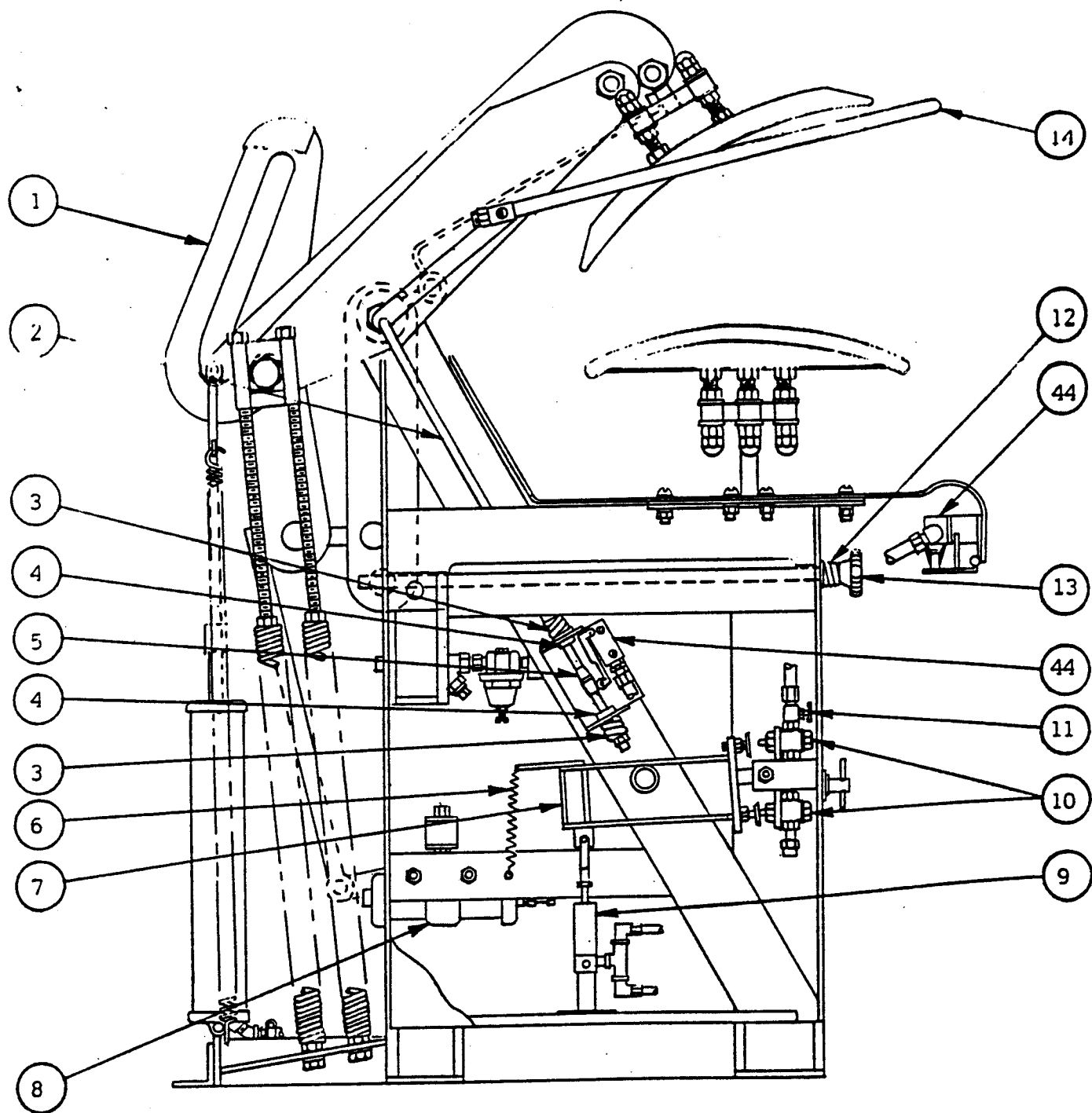


Figure 12
Parts Drawing, Left Side

PARTS ILLUSTRATION
RIGHT SIDE VIEW

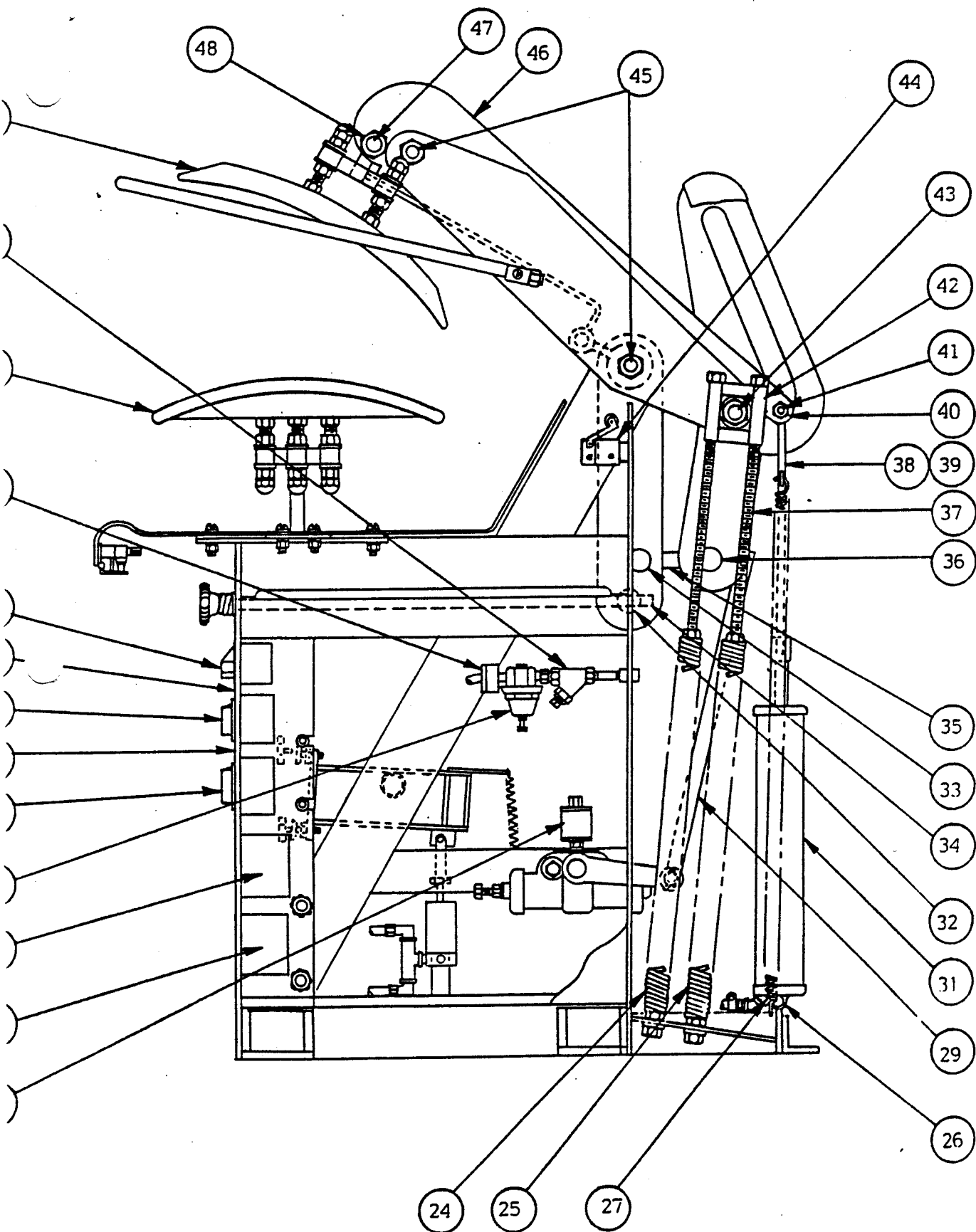


FIGURE 13
Parts Drawing, Right Side

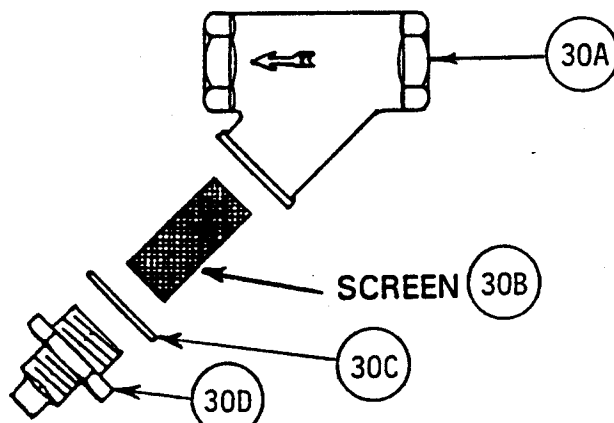


Figure 14
AIR STRAINER, PART NO.16610

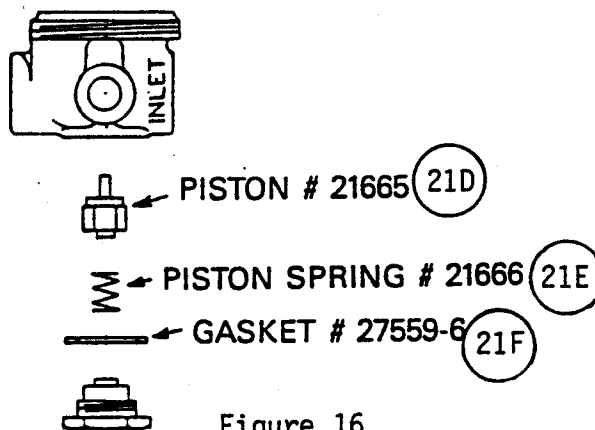
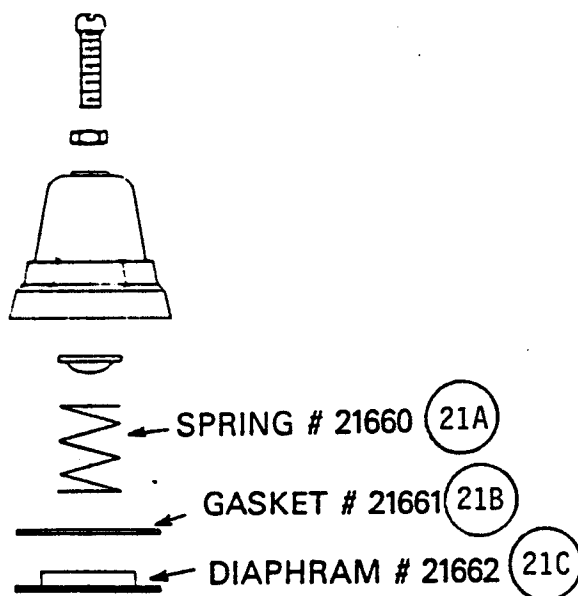


Figure 16
REGULATOR, PART NO.16048

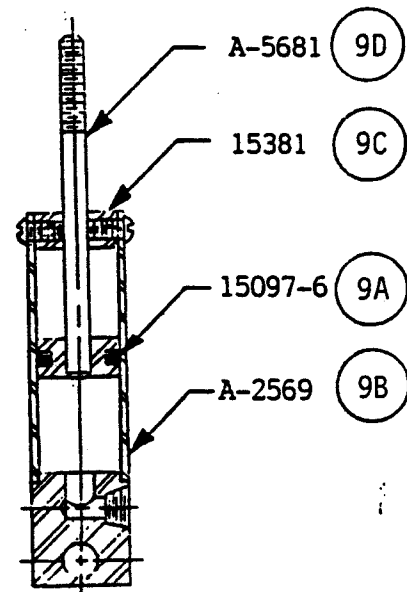


Figure 15
ACTIVATING CYLINDER ASSY PN A-5821

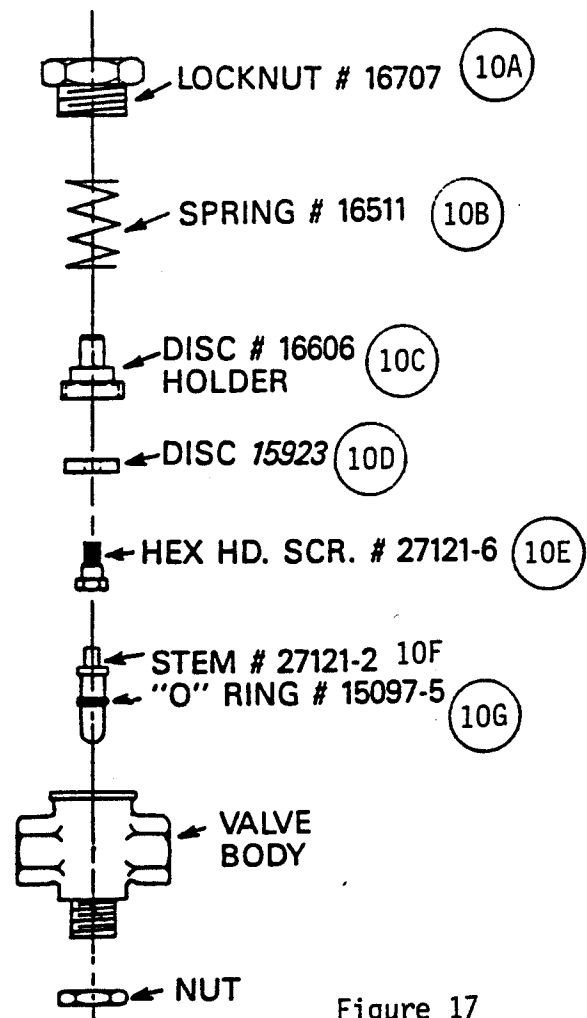


Figure 17
VALVE, PART NO.15100

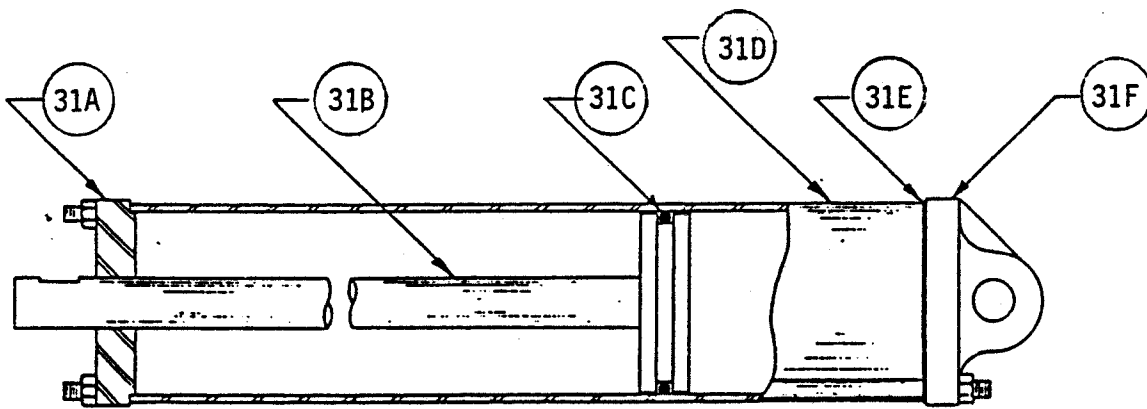


FIGURE 18. Parts Drawing, Cylinder Assembly

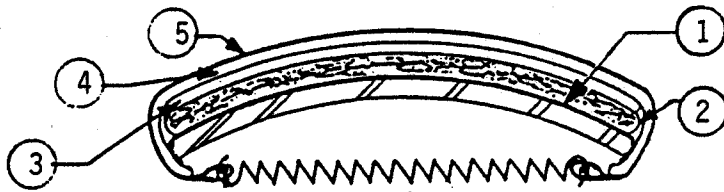


FIGURE 19. Parts Drawing, Padding

7.2 PARTS BY OTHER VENDORS

Forenta Part #	Fig#-Item	Vendor Name (See pg 7-8 for address)	Vendor Part #
15097-4	18-31C	General Rubber & Plastic	Precision #332-7507
15097-6	15- 9A	General Rubber & Plastic	Precision #115-7507
15100	12-10	United Brass Works	43-1/4
15403	18-31E	Cooper Mfg. Co.	Forenta #15403
15464-2	13-15	Acra Electric Company	Forenta #15464-2
15786	13-25	Kokomo Spring Corp.	Forenta #15786
15803	13-27	Pepka Spring Company	Forenta #15803
15941	12- 6	Kokomo Spring Corp.	Forenta #15941
16048	13-21	A.W.Cash Valve Mfg.Co.	A-31S
16079-1	13-18	Dresser Industries	2" 1000
16282	19- 5	Tingue Brown	Forenta #16282
16371	12-11	Parker Brass Products	NV108P-4
16562	12-24	Kokomo Spring Corp.	Forenta #16562
16610	12-30	United Brass Works	200-3/8x24 Mesh
17386	19- 2	Resillo Press Pad Co.	Forenta #17386
18136	19- 3	Quality Products Company	Forenta #18136
18137	19- 4	Quality Products Company	Forenta #18137
18138	19- 1	Quality Products Company	Forenta #18138
18251-2	13-16	Acra Electric Company	Forenta #18251-2
28034-3	12-44	Air-Mite Devices, Inc.	MV2-C
30932	13-23	Allen-Bradley Company	500-TOB93
30933	13-20	Robert Shaw Controls	Z60100-0100
30934	13-17	OEM Controls	NN-16
A-786	12- 8	Hydraulic Products Corp.	Forenta #a-786

9.3 VENDOR LIST & ADDRESSES

Acra Electric Company
3801 North 25th Avenue
Schiller Park, IL 60176

Air-Mite Devices, Inc.
4739 W. Montrose Avenue
Chicago, IL 60641

Allen-Bradley Company
Industrial Control Division
Dwight Place
Fairfield, NJ 07006

A.W.Cash Valve Mfg.Co.
PO Box 191
Decatur, IL 62525

Cooper Mfg. Co.
409 South First Street
Marshalltown, IA 50158

Dresser Industries
250 E. Main Street
Stratford, CT 06497

General Rubber & Plastic
4785 Mendel Court
Atlanta, GA 30336

Hydraulic Products Corp.
613 West 11th Street
Erie, PA 16501

Kokomo Spring Corp.
Kokomo, IN 46901

OEM Controls
10 Controls Drive
Shelton, CT 66484

Parker Brass Products
6796 Jimmy Carter Blvd.
Norcross, GA 30071

Pepka Spring Company
810 S. Waugh
Kokomo, IN 46901

Quality Products Company
4248 North Elston Avenue
Chicago, IL 60618

Resillo Press Pad Co.
6950 N. Central Park Avenue
Chicago, IL 60645

Robert Shaw Controls
Yongswood, PA 15697

Tingue Brown
507 Bishop Street
Atlanta, GA 30318

United Brass Works
Randleman, NC 27317

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